

PR

3578

OTS: 60-31,419

JPRS: 3578

19 July 1960

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TRAUMATOLOGY AND ORTHOPEDICS IN THE CHINESE PEOPLE'S REPUBLIC

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19990630 139

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U. S. JOINT PUBLICATIONS RESEARCH SERVICE
205 EAST 42nd STREET, SUITE 300
NEW YORK 17, N. Y.

JPRS: 3578

CSO: 3825-D

TRAUMATOLOGY AND ORTHOPEDICS IN THE CHINESE PEOPLE'S REPUBLIC

Following is a translation of an article by Asst. Prof. M. G. Grigor'yev in the Russian-Language Periodical Ortopediya, Traumatologiya i Protezirovaniye (Orthopedics, Traumatology, and Prosthetics), Moscow, Vol. 21, No. 2, pages 76 - 79.

We were fortunate enough to be in the Chinese People's Republic during July and August 1959 on a mission for the Ministry of Health, USSR. I visited medicoprophyllactic institutions and clinics of institutes in Peiping, Tientsin and Shanghai.

I became familiar with the work of our Chinese comrades in the field of traumatology and orthopedics by visiting wards, examining patients in clinics, watching operations, and attending special conferences in clinics. I was treated in a very friendly fashion everywhere and generously permitted to share their rich experience.

Medical workers in the Chinese People's Republic are unusually enthusiastic about their work and are striving to serve the people to the best of their ability.

The government is much concerned with the health of the workers. They have made tremendous progress in organizing and improving medical care, particularly in traumatology, during the years the people's regime has been in power.

They have created a network of specialized institutions in the country, opened many first-class hospitals and equipped them with up-to-date apparatus, and staffed the hospitals and research institutes with highly qualified personnel. Medicosanitary units have been set up in industrial establishments and in rural communes to improve working conditions, carry out extensive prophylactic measures, and provide traumatological assistance.

In Peiping, I visited the country's orthopedic center - the 550-bed Tszi-Shuy-Tan' hospital; the 600-bed Syuan'-Uy hospital specializing in the treatment of skull injuries; the No. 301 800-bed hospital; the surgical clinics of the Peking Medical Institute; the Institute of Plastic Surgery, Academy of Medical Sciences, Chinese People's Republic, where great success has been achieved in treating burns and the sequelae; the Se-khe Institute, Academy of Medical Sciences, Chinese People's Republic; clinics of the Peking Scientific Research Institute of Folk Medicine.

In Tientsin, I became acquainted with the work of the clinics

of the First Medical Institute, clinical departments of the Institute of Blood Transfusion, Academy of Medical Sciences, Chinese People's Republic, and the orthopedic and traumatological clinics of the Central People's Hospital. In Shanghai, I visited the orthopedic, traumatological, and military field surgical clinics of the Second Chinese Military Medical Institute; the First and second Shanghai Medical Institutes; the first clinic of the Scientific Research of Acupuncture (chzhen-tszyu therapy); medicosanitary units of the Eleventh Textile Factory and Metallurgical Plant.

All these hospitals and clinics are major specialized institutions containing 300-500-1000 beds. They are well equipped and furnished buildings constructed by the regime.

A feature of the Chinese People's Republic is the organization between 1956 and 1958 of clinical departments to study the effectiveness of Chinese folk medicine using modern clinical and laboratory methods of examining patients. Careful and convincing records are kept. This work is particularly necessary because the Kuomintang clique, when it was in power, was very scornful of traditional Chinese medicine and folk doctors. No effort was made to discover or popularize the many highly effective methods of treatment used by folk doctors that completely satisfy the scientific requirements of our time.

Comrade MaoTse-tung has referred to the need of carefully studying and mastering the great legacy of Chinese folk medicine for the good of the people.

Experienced folk doctors have been invited to work in the departments of folk medicine. The apprenticeship system is widely followed. Young doctors are sent to well-known folk doctors for two to three years of work on probation after graduation from medical school.

A more or less typical specialized institution of our kind is the Tsi-Shuy-Tan' (Peiping) hospital which occupies five specially constructed, well planned five-story buildings (cf. figure). The grounds of the hospital include an artificial pond and hill with a park for the recreation of the patients. It has departments for hand and finger traumas, joint injuries, fractures of the long tubular bones, burn (fresh burns) and bone pathology (chiefly tuberculosis of bones and joints).

The hospital carries on medicoprophylactic, scientific research, and organization-methods work, being the center for the latter, and is comparable to our Central Institute of Traumatology and Orthopedics.

The hospital is run by the famous Chinese specialist Prof. Myn'. Such highly qualified men as Professors Shun, Van, etc. head the various departments.

There are no specialized institutes in the Chinese People's Republic for the treatment of tuberculosis of bones and joints.

The Chinese are greatly interested in the proper organization

of the surgical area, auxiliary facilities, supply and sterilization rooms, etc. The surgical areas generally have rest rooms for the doctors, nurses, etc. The surgical section in the 'Tszi-Shuy-Tan' hospital occupies an entire five-story building connected by passageways to the clinical departments. There are seven separate, well built operating rooms. Some 1200 to 1300 scheduled operations are performed annually. The operating rooms have up-to-date equipment and instruments locally manufactured (a Shanghai factory); they are air conditioned.

I watched osteosynthesis operations for transtrochanteric fracture of the femur, anastomosis of the ulnar and median nerves, traumatic paralysis of the hand, incision of a cold abscess with removal of the sequestrums and resection of the prolapsed part of the intervertebral disk. This last operation is frequently performed in China. In the above-mentioned hospital more than 100 such operations were performed during the past five years and more than 400 in the folk hospital of Tientsin. Full recovery was noted in 83.3% of the patients, improvement in 13.2%, and an unsatisfactory outcome in only 3.5%.

Worth noting among the surgical techniques developed in the hospital (Prof. Myn') is the operation for congenital dislocation of the femur in adults. The operation is based on the principle of Schanz' operation except that osteotomy of the femur is performed not on the level of the ischial tuberosity, but on the level of the acetabulum. The fragments are placed at such an angle that the head of the femur fits into the acetabulum. The fragments are secured by a metal plate with screws. This method was used on 52 patients who were followed up for five or six years; the results were good. The same technique is applied in the case of asymphytous medial fractures of the neck of the femur.

Extensive use is made in China of spinal anesthesia and endotracheal anesthesia. Local and intraosseous anesthesia are not used. There is an institute of anesthesiologists.

Among those hospitalized, I saw chiefly patients with tuberculosis of bones and joints, diseases of the intervertebral disk and with various injuries. The number of patients with congenital orthopedic diseases is remarkably small. For example, only six persons with congenital femoral dislocations and nine persons with congenital clubfoot were operated on during the past five years. According to our Chinese friends, congenital diseases of the sustentacular-motor apparatus are rare.

The traumatological departments handle mostly patients with bone fractures. Fractures of the long tubular bones are generally treated conservatively. Skeletal traction is combined with subsequent application of plaster casts. Fractured shinbones, forearms, and shoulders are often immobilized in accordance with the principles of Chinese folk medicine. The hospital has devised a special system of skeletal traction that makes it possible to place the extremities

in a variety of positions. A model of an original table has also been elaborated for shock patients. It is comparatively simple in design and extremely convenient to use.

The folk hospitals comprising 800 to 1500 beds and located in major industrial and administrative centers are unusual institutions. The Central Folk Hospital in Tientsin has 1500 beds and all the specialized clinics (therapeutic, surgical, neurological, eye, gynecological, etc.) Each clinic has departments of traditional Chinese medicine. The orthopedic-traumatological department of the hospital with 420 beds is a first class clinic that admits injured patients from the entire city of seven million population and conducts a vast amount of medicoprophylactic, scientific research, and organization-methods work. This clinic is also a center for postgraduate training of physicians. The structure of the clinic is unique. It has a scientific secretary and a scientific "informant" who is responsible for the long-range results of treatment. It has departments of traumatology, tuberculosis of bones and joints, orthopedics, children's orthopedics, arthrology (rheumatic and infectious polyarthrititis), bone tumors, and a prosthetics factory. The scientific head of the orthopedics department of the hospital and the prosthetics factory is the well-known author of a number of monographs, the energetic Prof. Fan'.

The following features of the work of our Chinese friends are worth special attention and study: (a) treatment of fractures by the methods of folk medicine; (b) treatment of poliomyelitis in the recovery period by acupuncture; (c) organization of the treatment of burns.

Chinese folk methods of treating bone fractures are ancient. Over 2000 years ago a manual was issued on the treatment of fractures.

The departments of folk medicine of the specialized hospitals and clinics of the medical and research institutes carry on extensive clinical-experimental research on the effectiveness of traditional methods of treating bone fractures using modern clinical and laboratory diagnostic techniques (roentgenography, study of deposits of calcium salts, biochemical composition of the blood, etc.).

The traditional methods of handling fractures are comprehensive and include: (a) manual reposition and light fixation of the fractured parts with bamboo boards or cardboard, (b) use of external preparations (ointments to reduce pain and facilitate the resorption of edemas and hematomas), (c) internal preparations (pills and herb decoctions to stimulate the formation of callus), and (d) early movement two to three days after reposition.

The folk doctor is helped by another doctor or assistant. They have an excellent knowledge of anatomy and by observation, palpation, and study of crepitation infallibly diagnose the fracture and even its nature. The diagnosis is subject to confirmation by X-rays.

Fixation of the fractured parts is accomplished in various ways depending on the site of the injury. In diaphysial fractures of the

shoulder the joints are generally not immobilized. In the case of metaphysial and epiphysial fractures, immobilization of the nearest joint is effected by two cardboard splints with a little cotton padding. The bandage is applied in such a way that it can be loosened as the swelling increases or tightened if it gets loose without disturbing the immobilization. Cases of redislocation of fragments are very rare. There are ready fracture kits put out by the medical industry.

The polyclinic department of the hospital showed me more than 10 patients kept under prolonged observation after treatment of different kinds of fractures along with their before and after treatment X-rays. Reposition was generally ideal, and the anatomic and functional results were excellent.

I observed very good results obtained by treating fractures of the patella by the folk method of separating the fragments. With the leg in extended position a roll of gauze is wound around the fragments of the patella and tightened with a bandage in the form of a sling-clamp like that used to stop blood circulation. The degree of tightening is regulated by the bandage. They permit loading the leg early.

Many clinics are engaged in experimental-clinical investigation of the effectiveness of folk methods of treating fractures of the long tubular bones. They showed me many patients with very good functional and anatomic results after fractures. Callus forms quickly.

Our Chinese comrades think that the folk methods of treating fractures are superior to European methods in the comparative simplicity of the techniques used, ease of immobilization, more rapid formation of callus, good restoration of function, and shortened duration of treatment.

According to Ge Yu-pin, head of the clinic of the All-Chinese Scientific Research Institute of Chinese Medicine (Peiping), callus forms in adults 30 to 35% more rapidly when folk methods are used. Dr. Shu (Second Peiping Medical Institute) says that consolidation of the fragments is 36% faster and there is more rapid deposition of calcium salts into primary callus. The clinical-experimental data of Prof. Fan' (Tientsin) indicate that the treatment of fractures of the shinbone, forearm, and shoulder by traditional methods takes 25 to 30% less time than with European methods. Clinical data of the Peiping Medical Institute (Prof. Chu) show that folk medicines taken internally hasten union of the fragments 20 to 30%.

Acupuncture is known to be a very popular type of treatment in China. It is widely used for a number of orthopedic diseases and sequelae of injuries.

Acupuncture treatment of poliomyelitic patients in the recovery stage is unusually interesting. The first polyclinic of the Scientific Research Institute of Chzhen-tssu Therapy (Shanghai) and the Scientific Research Institute of Pediatrics (Peiping) used this technique on 1086 patients, ranging chiefly from one to three years in age,

in the recovery stage of poliomyelitis. These who came: about 3 months after the disease - 36%, about 6 months - 21.5%, about 12 months - 12.6%, and over a year - 29.9%. Most had paralysis of the legs - 84.2%, hands - 6.1%, hemiparesis - 1.4%, crossed paralysis - 2.33%, involvement of facial muscles - 5.07%. Complete restoration of function was noted in 19.2%, improvement in 76.6%, and no changes in 4.2%.

Persons with complete restoration of function had a course of treatment consisting on the average of 41 sessions of acupuncture, those showing improvement - 54 to 56 sessions, and those exhibiting no changes - 48 sessions. Flail joint and secondary deformations do not respond to chzhen-tssu therapy.

This technique produces positive results, is simple, cheap, and requires little materials. It seems quite worthwhile to us.

A great deal of attention is paid to the treatment of burns in the Chinese People's Republic. All the large surgical institutions of the country have burn departments of 20 to 50 beds and isolation wards rigorously maintained (all personnel change their clothes and shoes, wash their hands just as before operations, there is air conditioning, daily bacteriological control of the air - no more than five colonies permitted in a dish). The wards have special beds that make it possible to turn the patient around without moving him. The large hospitals with surgical departments have burn wards.

The treatment of burns in the Chinese People's Republic is organized in exemplary fashion.

There is extensive research, especially in the Second Chinese Military Medical Institute in Shanghai. Therapeutic departments of the Institute are conducting intensive studies of burns. Progress is being made in prevention and in the treatment of burn shock; hibernation is widely used. Burns are treated both by the open and by the closed methods. Burns of the face, neck, and hand are treated by the open method, circular burns of the extremities and trunk by the closed method. Bandages are applied with sterile vaseline oil or with antibiotics. Early necrectomy and auto- or homoplasty are used everywhere. Persons with at least 5% of the body surface burned are hospitalized, the others are treated as outpatients. Experiments are now being conducted on the possibility of using heteroplasty of the skin (pig, chicken).

Patients with severe, extensive burns are fed with a sound diet and are administered a mixture of the Spasokukotskiy type. Drip transfusion of blood, plasma, and fluids (about 10 liters a day) is widely used.

Willow withes are used for osteosynthesis. Lyu Da-fu, a folk doctor from Ukhan', reported in the newspaper, Public Health, on several successful osteosynthesis operations performed in September 1958 in which willow withes were employed for bone fractures.

Willow withes for osteosynthesis have long been popular in folk medicine. Fresh branches are cut to the size of the medullary canal before the operation, their ends sharpened, the bark stripped off,

and boiled for 10 minutes. They are used as intramedullary rods. The withes apparently promote the growth of callus and themselves turn into bone. In recent years three patients in the hospital of Tsz-Shuy-Tan' developed osteomyelitis after osteosynthesis with willow withes. The withes were removed, but consolidation has not taken place as yet. Other clinics have observed the same phenomenon.

The usefulness of willow withes for osteosynthesis is now being studied in the hospital of Tsi-Shuy-Tan' (Peking), hospital no. 301, and clinics of the Second Military Medical Institute in Shanghai. It is still too early to draw any conclusions.

I should like to conclude by expressing my deepest appreciation for the hospitality, attentiveness, and friendship shown me by Comrade Li, Director of the Cabinet of External Relations of the Ministry of Health, Chinese People's Republic, Comrades Lyu Si-shen and Sun Min-i of the same office, Professors Myn', Fan', Van, Shun, and others.

Received October 29, 1959

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